```
s ultrasonic connection technique#
         41407 ULTRASONIC
        760490 CONNECTION
           519693 TECHNIQUE#
L1           2 ULTRASONIC CONNECTION TECHNIQUE#
                (ULTRASONIC(W)CONNECTION(W)TECHNIQUE#)

=> d l1 1-2 cit
```

1. 5,400,072, Mar. 21, 1995, Video camera unit having an airtight mounting arrangement for an image sensor chip; Akiya Izumi, et al., 348/335 [IMAGE AVAILABLE]

2. 5,274,456, Dec. 28, 1993, Semiconductor device and video camera unit using it and their manufacturing method; Akiya Izumi, et al., 348/335, 207; 359/808; 396/544 [IMAGE AVAILABLE]

```
=> s l1 and plastic#
        463835 PLASTIC#
L2           2 L1 AND PLASTIC#

=> s ultrasonic connection# and plastic#
           41407 ULTRASONIC
        801376 CONNECTION#
           22 ULTRASONIC CONNECTION#
                (ULTRASONIC(W)CONNECTION#)
           463835 PLASTIC#
L3          11 ULTRASONIC CONNECTION# AND PLASTIC#

=>  s telephone# and l3
         45404 TELEPHONE#
L4           0 TELEPHONE# AND L3

=> s telephone# and l2
         45404 TELEPHONE#
L5           0 TELEPHONE# AND L2

=> d l3 1-11 cit
```

1. 5,419,195, May 30, 1995, Ultrasonic booted head probe for motor bore inspection; James R. Quinn, 73/623, 644 [IMAGE AVAILABLE]

2. 5,400,072, Mar. 21, 1995, Video camera unit having an airtight mounting arrangement for an image sensor chip; Akiya Izumi, et al., 348/335 [IMAGE AVAILABLE]

3. 5,274,456, Dec. 28, 1993, Semiconductor device and video camera unit using it and their manufacturing method; Akiya Izumi, et al., 348/335, 207; 359/808; 396/544 [IMAGE AVAILABLE]

4. 5,136,672, Aug. 4, 1992, Fiber protector; Denis G. Mulholland, et al., 385/53 [IMAGE AVAILABLE]

5. 5,123,071, Jun. 16, 1992, Overconnector assembly for a pair of push-pull coupling type optical fiber connectors; Denis G. Mulholland, et al., 385/53, 55, 56 [IMAGE AVAILABLE]

6. 5,082,344, Jan. 21, 1992, Adapter assembly with improved receptacle for a push-pull coupling type of optical fiber connector; Denis G. Mulholland, et al., 385/60 [IMAGE AVAILABLE]

7. 5,042,891, Aug. 27, 1991, Active device mount assembly with interface mount for push-pull coupling type optical fiber connectors; Denis G. Mulholland, et al., 385/93, 88 [IMAGE AVAILABLE]

8. 5,018,316, May 28, 1991, Polishing fixture for optical fiber of push-pull connector; Denis G. Mulholland, et al., 451/364, 365, 460 [IMAGE AVAILABLE]

9. 4,796,132, Jan. 3, 1989, Thin film magnetic head having Au **ultrasonic connection** structure; Yos
hinori Dekura, et al., 360/113, 125 [IMAGE
AVAILABLE]

10. 4,795,939, Jan. 3, 1989, Electric lamp bulb attachment arrangement; Fritz Eckhardt, et al., 313/318.01, 315, 318.05; 362/368 [IMAGE AVAILABLE]

11. 4,591,051, May 27, 1986, Billiard ball and rack storage case; Michael E. Lowman, 206/315.9, 315.1, 579; 473/41 [IMAGE AVAILABLE]

=>

=> s seal? and l3
446701 SEAL?
L7 4 SEAL? AND L3

=> d l7

1. 5,419,195, May 30, 1995, Ultrasonic booted head probe for motor bore inspection; James R. Quinn, 73/623, 644 [IMAGE AVAILABLE]

=> d l7 1-4 cit,ab

1. 5,419,195, May 30, 1995, Ultrasonic booted head probe for motor bore inspection; James R. Quinn, 73/623, 644 [IMAGE AVAILABLE]

US PAT NO: 5,419,195 [IMAGE AVAILABLE] L7: 1 of 4

ABSTRACT:
An ultrasonic probe is housed in a probe housing filled with fluid under controlled pressure. The probe provides ultrasonic sound through the fluid to a bladder which presses against the interior of a rotor wall. Located along the periphery of the bladder, a fluid wiper/soaker conduit provides droplets of fluid to the wall of the rotor bore to minimize friction between the bladder and the rotor bore wall and provide an ultrasonic path between the bladder and the rotor wall.

2. 5,400,072, Mar. 21, 1995, Video camera unit having an airtight mounting arrangement for an image sensor chip; Akiya Izumi, et al., 348/335 [IMAGE AVAILABLE]

US PAT NO: 5,400,072 [IMAGE AVAILABLE] L7: 2 of 4

ABSTRACT:
A video camera unit is separated into a holder for receiving lenses and a base on which a solid-state image pickup chip is mounted. The holder and the base are assembled together with the distance between them made variable so that it is possible to adjust the back focus of the lens. Further, a video camera unit has a holder which is separated into a first holder for receiving lenses and a second holder for receiving a solid-state image pickup device so that both holders can be assembled together with the distance between them made variable. Therefore, it is also possible to adjust the back focus of the lens.

3. 5,274,456, Dec. 28, 1993, Semiconductor device and video camera unit using it and their manufacturing method; Akiya Izumi, et al., 348/335, 207; 359/808; 396/544 [IMAGE AVAILABLE]

US PAT NO: 5,274,456 [IMAGE AVAILABLE] L7: 3 of 4

ABSTRACT:
An imaging assembly, which is particularly useful for a video camera unit, comprising a set of lenses, some of which have a non-refractive surface, and an image sensor. A holder is provided for holding both the set of lenses and the image sensor to be aligned with one another. Circuitry is also provided so that the sensitivity of the image sensor can be electrically varied.

4. 4,795,939, Jan. 3, 1989, Electric lamp bulb attachment arrangement; Fritz Eckhardt, et al., 313/318.01, 315, 318.05; 362/368 [IMAGE AVAILABLE]

US PAT NO: 4,795,939 [IMAGE AVAILABLE] L7: 4 of 4

ABSTRACT:
To permit connection of a high temperature resistant **plastic** material forg a bulb holder element (4, 15, 20) to which a light bulb (1, 14, 19) is attached in the tubular opening of the base structure (5, 16), the bulb holder element is essentially barrel-shaped to permit alignment of the bulb with respect to the base structure, and subsequent connection by welding together the **plastic** base structure with the **plastic** bulb holder element by exposure to a high-frequency field. To cause melting of the **plastic**, ferromagnetic material, typically a nickel-iron alloy, is located between the bulb holder element and the base structure, for example in form of a ring (11) snapped into a groove (12) formed on the holder element.

PAT NO: 4,795,939 [IMAGE AVAILABLE] L7: 4 of 4

ABSTRACT:
To permit connection of a high temperature resistant **plastic** material forg a bulb holder element (4, 15, 20) to which a light bulb (1, 14, 19) is attached in. . . barrel-shaped to permit alignment of the bulb with respect to the base structure, and subsequent connection by welding together the **plastic** base structure with the **plastic** bulb holder element by exposure to a high-frequency field. To cause melting of the **plastic**, ferromagnetic material, typically a nickel-iron alloy, is located between the bulb holder element and the base structure, for example in. . .

SUMMARY:

BSUM(4)

Electric . . . is provided to hold the bulb in position, for example in a base structure. The base structure may be of **plastic**. The holder structure or holding element which is interposed between the base structure and the lamp bulb itself can be. . .

SUMMARY:

BSUM(5)

Lamps . . . in the referenced U.S. Pat. No. 4,609,977, is a halogen incandescent lamp which is terminated in a pinch or press **seal**. The pinch or press **seal** is received in a metallic holder structure which, after adjusting and aligning the bulb with respect to a **plastic** base structure, is secured to the base structure by high-frequency heating.

SUMMARY:

BSUM(6)

Various . . . that use of highly heat-conducting metallic holder structures for the light bulb itself which, in turn, are connected to a **plastic** base element, is undesirable.

SUMMARY:

BSUM(8)

It . . . electric bulb, and particularly for bulbs which operate at high temperature, and which, nevertheless, can be readily connected to a **plastic** base structure, after adjustment of the bulb with respect to the base structure; and, preferably additionally, permitting use of existing. . .

SUMMARY:

BSUM(9)

Briefly, . . . element, at least in the region of seating engagement with the base structure, is made of a high temperature resistant **plastic** material. To permit welding together of this **plastic** material with the conventional **plastic** material of the hollow base structure, a coupling element of ferromagnetic material, preferably in sheet or foil form, is located. . .

SUMMARY:

BSUM(12)

The . . . element. Upon exposing of the adjusted, aligned and assembled bulb holder structure and base structure to a high-frequency field, the **plastic** material of the holder element and of the base structure will melt together in the region of the ferromagnetic material,. . .

SUMMARY:

BSUM(13)

The . . . element, the part connected to the bulb being made of ceramic, in which the ceramic part is secured to a **plastic** part, the two parts being connected together by ultrasonic riveting. Other connections are possible, for example snap-together connections and the. . .

DETDESC:

DETD(2)

Referring . . . at 2. Connecting leads 3 extend from the bulb 1. The bulb 1 is terminated by a press or pinch **seal**, which press or pinch **seal** is retained and secured in a bulb holder element 4.

DETDESC:

DETD(3)

In accordance with a feature of the invention, the holder element 4 is made of a high-temperature resistance **plastic** which is generally barrel-shaped--as seen in FIG. 1. The barrel-shaped outer surfaces are formed by convex, essentially ball-shaped surfaces.

DETDESC:

DETD(5)

A . . . weld connections thereof. The cover sleeve 8 is riveted to the base structure 5, for example by ultrasonic riveting or **ultrasonic connection**. The cover sleeve 8 is formed with an adjustment and positioning ring 9. Any free space between the bottom wall of the base structure 5 and of the sleeve 8 is filled with a **plastic** resin 10.

DETDESC:

DETD(7)

The . . . in the holder element 4 in any suitable and standard and well-known manner to connect a bulb to a high-temperature **plastic** bulb holder element. It is difficult to seat a lamp with a pinch **seal** accurately in a holder element because the pinch **seal** terminates usually in an irregular surface. Consequently, and in order to provide accurate positioning of incandescent filaments 2 with respect. . .

DETDESC:

DETD(8)

The . . . appropriately adjusted with respect to the positioning ring 9, the lamp is subjected to a high-frequency field which causes the **plastic** material in the region of the ferromagnetic coupling structure 11 to melt, thus interconnecting the **plastic** materials of the bulb holder element 4 and the base structure 5. Typically, the materials of the base structure 5. . .

DETDESC:

DETD(9)

The . . . groove 12 formed in the barrel-shaped element 4. Preferably, the ring 11 is formed with openings 13 therein, which permit **plastic** material which melts to ooze through, and additionally locate the ring and the entire structure within the base 5. This. . .

DETDESC:

DETD(10)

The . . . in the expansion of the ring 11 retains the ring in the groove until the element 4 is welded by **plastic** welding to the base 5.

DETDESC:

DETD(11)

Embodiment . . . discharge lamps have recently been proposed, and FIG. 2 illustrates a single-ended high-pressure discharge lamp 14 terminating in a pinch **seal**. FIG. 3 illustrates a double-ended high-pressure discharge lamp 19, terminating in two pinch **seals**.

DETDESC:

DETD(12)

In . . . in which the lamp itself is seated is made of ceramic. The ceramic first part 15a is connected to a **plastic** second part 15b which is adapted for connection in the base structure 16 which, likewise, is of **plastic**. The **plastic** part 15b is secured to the ceramic part 15a by **plastic** rivets formed, for example, on the **plastic** part as projecting pins or stubs, passing through suitable holes formed in the ceramic, and riveted over by ultrasonic riveting.

DETDESC:

DETD(13)

Suitable **plastics** for the **plastic** part 15b of the holder element 15 are high-temperature resistant **plastics** known under the trade names "Ultem 2300" and "Ryton". The base structure 16, for example, may be made of a. . .

DETDESC:

DETD(14)

The . . . base structure 16 and the cover element 17 define therebetween a hollow space which, as before, is filled with a **plastic** resin. The positioning or adjustment ring 18 is unitary with the base structure 16.

DETDESC:

DETD(15)

Embodiment . . . is retained in a bulb holder element 20 which, again, is a two-part structure. The holder element 20 includes a **plastic** part 20b which is connected to a generally L-shaped ceramic part 20a having a base portion 20a1 and an upstanding portion 20a2. The ceramic and **plastic** parts are secured together, again, by ultrasonic riveting-over a **plastic** pin or stub 25, passed through an opening in the ceramic portion 20a1--see FIG. 3.

DETDESC:

DETD(16)

The ceramic L-shaped part 20a includes a round base plate 20a1 which is fitted on the **plastic** part 20b of the holder 20. The plate 20a1 is integral with a trough-shaped elongated portion 20a2 which extends in. . .

CLAIMS:

STRACT:
The . . . and entirely slippery, cassette wherein each of said zones is constituted by an independent part molded in self-lubricating and anti-abrasive **plastic** material, the said part being added on to the corresponding base of the casing and being fixed thereon by non-deformable securing means.
According to the invention, each projecting zone is constituted by an independent part, molded from self-lubricating and antiabrasive **plastic** material, the said part being added on to the corresponding casing base and fixed thereon by non-deformable fastening means.

SUMMARY:

BSUM(8)

It . . . disadvantages by proposing that each of the said zones be constituted by an independent part, molded from self-lubricating and antiabrasive **plastic** material, the said part being added on to the corresponding casing base and fixed thereon by non-deformable fastening means.

SUMMARY:

BSUM(10)

The molded parts are secured on the casing parts in special points and mainly by **ultrasonic** **riveting**.

DETDESC:

DETD(1)

FIG. . . . clearly that the casing of the cassette is in two parts 1 and 5, produced separately by injecting a suitable **plastic** material into a mold.

DETDESC:

DETD(9)

For example, the added-on parts, described hereinafter, are made from a moldable **plastic** material, which is self-lubricating to help the sliding of the tape, and anti-abrasive to preserve said tape. Each molded part. . . is a polyacetal resin such as a chemically lubricated polyformaldehyde resin. For example, each part can be made from the **plastic** material produced and sold by Dupont de Nemours under the name "DELRIN CL" or "ZYTEL".

DETDESC:

DETD(10)

Opposite . . . are also molded with the base, traversing holes 24 provided in said part (FIGS. 1 and 2) and set by **ultrasonic** **riveting** into recesses 25 of said holes so as to form holding heads 26. Finally, the guiding surface 18 of the. . .

DETDESC:

DETD(11)

Similarly, . . . are molded with the said base 2, traverse holes 33

provided in the parts 28, 29 and are set, by **ultrasonic riveting** in recesses (FIG. 2) of said holes to form supported holding heads. The arcs 35 in the centre of the. . .

PAT NO: 5,400,072 [IMAGE AVAILABLE] L7: 2 of 4

DETDESC:

DETD(3)

FIGS. . . . receiving section 11 formed in its base portion. Reference characters L1, L2, L3 and L4 denote a set of combined **plastic** lenses fitted in a lens receiving section 12 of the lens holder 1. Reference numeral 6 denotes a solid-state image. . .

DETDESC:

DETD(4)

The lens holder 1 is made of material having a thermal expansion coefficient approximately equal to that of the **plastic** lenses L1 to L4, e.g., synthetic resin. The image pickup device receiving section 11 is formed in the shape of. . .

DETDESC:

DETD(5)

The **plastic** lenses L1, to L4 are designed with constants or parameters indicated specifically in Table 1 and have the characteristics as. . .

DETDESC:

DETD(36)

A . . . this case, a semicircular portion 126 projected on the bottom surface of the holder 1 serves as a guide. The **plastic** substrate 62 of the device 6 also has a complementary semicircular concave portion in accordance with the shape of the. . .

DETDESC:

DETD(103)

The . . . the lens holding cover 114 and a substrate 249 of the solid-state image pickup device 6 are all made through **plastic** shaping and are all black in their color to prevent diffused reflection. The cover 114, the holder 1 and the substrate 249 contain glass fiber mixed as filler during the **plastic** shaping to increase their mechanical strength and to reduce their thermal expansion coefficient. The holder 1 and the cover 114 are made of the **plastic** material of polycarbonate resin that can be easily shaped (i.e., having high shaping accuracy). The substrate 249, which is required to be heat-resistant because of soldering of leads 61 to a printed board, etc., is made of the **plastic** material of polyphenylene sulfide.

DETDESC:

DETD(106)

The . . . shut out at the inclined portions, thereby enhancing the moisture proof property of the lenses. In order to improve the **sealing** property, a slight clearance or gap is provided between the doughnut shape horizontal portion 205 of the case 200 and. . .

DETDESC:

DETD(109)

The transparent cap 250, which is made of glass, serves to **seal** the upper part of the unit and also to cut ultraviolet rays which will deteriorated the **plastic** lenses L1 to L4. The glass material has also other important features in taking images such as being difficult to scratch and heat-resistant as compared with **plastic** material.

DETDESC:

DETD(116)

The . . . The leads 61 of the device 6 are exposed not along the outside of the side surface 245 of a **plastic** substrate 249 unlike the embodiment of FIG. 5 but downwardly through the substrate 249 to decrease the gap between the. . . unit. An upper tip 279 of the lead 61 is bent downwardly at an angle of about 45.degree. within the **plastic** substrate 249. This tends to improve the horizontal accuracy of its upper flat portion 277 and firmly fix the lead. . . bonded to the above flat portion 277 and a bonding pad 280 of a chip 64 by means of the **ultrasonic** **connection** technique to electrically connect the flat portion 277 and the chip to each other. The lead 61 is bent by. . .

DETDESC:

DETD(120)

In . . . considerably low ratio to lead (Pb) is selected so as to have a higher melting point than the temperature of **plastic** molding to be described in step (c).

DETDESC:

DETD(122)

In step (c), the lead frame 300 is **plastic**-molded.

DETDESC:

DETD(124)

In . . . (e), the solid-state image pickup chip (die) 64 is bonded to the central portion of the upper surface of the **plastic** substrate 249 by jetting instantaneous hardening type viscous epoxy resin from multiple nozzles of an applier (die bonding). Then, the. . .

DETDESC:

DETD(127)

(1) The **plastic** molding is carried for only the lead frame, and it is not carried out after the die bonding of the. . .

DETDESC:

DETD(128)

(2) The molded **plastic** is used as a substrate for mounting the chip

thereon but is not used to **seal** the chip.

DETDESC:

DETD(129)

(3) The bonding post 277 of the **plastic**-molded lead 61 is exposed to the surface but is not embedded in the **plastic**.

DETDESC:

DETD(130)

(4) After the **plastic** molding, the chip 64 is substantially **sealed** by the holder 1 and the shield case 200.

DETDESC:

DETD(142)

A . . . the holder 2 as shown in FIGS. 20B and 20C for receiving the vestige of the gate used in injecting **plastic** material in forming the lenses. This eliminates the need of trimming of the vestige of the lens gate and, in. . .

DETDESC:

DETD(144)

A . . . the top surface of the chip 64 and to decrease the inclination error of the chip surface in pelleting and **sealing**.

DETDESC:

DETD(145)

In . . . by bonding the image pickup device 6 to the holder 1, one or both of the pelleting material and the **sealing** material may be an elastic material such as the bonding agent of silicon rubber in order to reduce the stress. . .

DETDESC:

DETD(162)

The . . . the base 2 to each other after adjustment of the back focus of the lens. Owing to this structure, the **sealing** property attained inside the holder 1 when the sleeve 200 is attached to assure the airtight **sealing** can be prevented from being deteriorated due to swelling of the bonding agent when the holder 1 and the base. . .

DETDESC:

DETD(164)

Bonding . . . stepped to be lowered by an amount corresponding to the thickness of the lead 61, so that there exists no **plastic** mold between the adjacent leads 61. This intends to facilitate the bending of the lead 61 at the bending point 272, while contributing to prevention of cracking and exfoliation of the **plastic** at the time of removing the molds.

DETDESC:

DETD(165)

After . . . the holder 1 and the base 2 to each other, the sleeve 200 is attached onto them so as to **seal** the inside of the holder 1 airtightly. Airtight **sealing** is attained by **sealingly** bonding the abutting surfaces of the tapered portion 301 of the base 2 to the tapered portion 300 of the sleeve 200. Differently from the embodiment 6, **sealing** is performed once only in **sealingly** assembling the base 2 and the sleeve 200 in this embodiment, thereby reducing the defective potential owing to decrease of the **sealing** portion in the assembly. Bonding of the base 2 and the sleeve 200 requires application of the external force. For. . . that of the others can be used as a mark for determination of the direction of the sleeve 200 in **sealing** the base 2 and the sleeve 200.

DETDESC:

DETD(166)

Next, . . . used besides the press work. Thereafter, the lead 61 is bent at bending points 276 and 274 and is then **plastic**-molded. In addition to the above working method, there is also considered, as a method exhibiting the excellent workability, one in. . .

. 5,280,191, Jan. 18, 1994, Lightwave packaging for pairs of optical devices having thermal dissipation means; Peter C. Chang, 257/712, 433, 718, 719, 723; 361/679, 707, 714 [IMAGE AVAILABLE]

2. 5,047,835, Sep. 10, 1991, Lightwave packaging for pairs of optical devices; Peter C. Chang, 257/433, 678; 385/33, 49, 88, 92 [IMAGE AVAILABLE]

3. 4,961,651, Oct. 9, 1990, Cage for rolling bearings; Jurgen Rabe, 384/51, 577 [IMAGE AVAILABLE]

4. 4,819,442, Apr. 11, 1989, Refrigerator system, control device therefor and methods of making and operating the same; Roger P. Sepso, et al., 62/187; 236/49.3 [IMAGE AVAILABLE]

5. 4,795,939, Jan. 3, 1989, Electric lamp bulb attachment arrangement; Fritz Eckhardt, et al., 313/318.01, 315, 318.05; 362/368 [IMAGE AVAILABLE]

6. 4,722,039, Jan. 26, 1988, Shaded beam vehicular discharge-type head lamp; Manfred Gaugel, 362/296; 313/15, 113; 362/61, 226, 263 [IMAGE AVAILABLE]

7. 4,671,638, Jun. 9, 1987, Moving coil electromagnetic actuator and shutter employing same; Richard N. Capobianco, et al., 396/464; 335/222; 396/493 [IMAGE AVAILABLE]

8. 4,609,977, Sep. 2, 1986, Incandescent lamp-base assembly, particularly for an automotive-type halogen incandescent lamp; Fritz Eckhardt, et al., 362/267, 61 [IMAGE AVAILABLE]

9. 4,501,375, Feb. 26, 1985, Easily-openable heat-seal lid; Tadahiko Katsura, et al., 220/270, 260 [IMAGE AVAILABLE]

10. 4,387,864, Jun. 14, 1983, Video cassette; Patrick P. Posso, 242/345, 606, 900 [IMAGE AVAILABLE]

11. 4,350,938, Sep. 21, 1982, Travel limit stop device for a motor-reducing unit intended in particular for a window wiper; Auguste Ecole, 318/443, 466, DIG.2 [IMAGE AVAILABLE]

12. 4,155,606, May 22, 1979, Two-part **plastic** comb cage; Klaus Kispert, et al., 384/576 [IMAGE AVAILABLE]

13. 4,120,250, Oct. 17, 1978, Connecting structure for shelves; Hans Viessmann, 108/144, 108, 152; 211/107, 126, 187; 248/188 [IMAGE AVAILABLE]

14. 4,110,549, Aug. 29, 1978, Environmentally protected electronic housing and heat sink structure, particularly for automotive use; Siegfried Goetzke, et al., 174/16.3; 257/704, 732 [IMAGE AVAILABLE]

15. 3,852,822, Dec. 10, 1974, HARD HAT CROWN SUPPORT BAND ATTACHMENT; Willis T. Watkins, et al., 2/417 [IMAGE AVAILABLE]